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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/649,277
Filing Date: August 27, 2003
Appellant(s): WESTPHAL ET AL.

Gary R. Jarosik
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/21/05 appealing from the Office action mailed 7/13/05.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,486,893	TAKAGI	1-1996
5,635,984	LEE	6-1997
5,164,831	KUCHTA et al.	11-1992
6,148,149	KAGLE	11-2000

5,343,560	TAKEDA et al.	8-1994
5,835,627	HIGGINS et al.	11-1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims (taken from Final Rejection dated 7/13/05):

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 6, 7, 12-16, 19, 20, 28-30, 33, 34, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,486,893 by Takagi in view of U.S. Patent 5,635,984 by Lee and U.S. Patent 5,164,831 by Kuchta et al. ("Kuchta").

Regarding claims 1, 13, 14, and 28, and 39, Takagi discloses a method and system for compressing and storing a plurality of images, comprising:

creating for each of a plurality of original images a plurality of resultant images by altering the content of each of the plurality of original images a corresponding plurality of different ways (figure 15: a plurality of resultant images for an original image (figure 13) is displayed; the figure shows only the resultant images for one original image in a digital camera, but Takagi's method is applicable to any pictures to be taken by the camera);

selecting from the plurality of resultant images created from each of the plurality of original images one resultant image (figure 15 and column 2, lines 1-16: the resultant images for each original image are displayed, and one resultant image from each group of resultant images is selected).

Takagi discloses displaying the plurality of resultant images on the camera screen as shown in figure 15, but Takagi is silent to compressing the plurality of resultant images.

Lee discloses a digital camera system. In particular, Lee discloses that in order to display more than one picture on the screen simultaneously (such as shown in figure 11D), that the picture data must be compressed (column 4, lines 22-28).

It would have been obvious to compress each resultant image as claimed, since Lee teaches that in order to display multiple images on a camera screen, as in figure 15 of Takagi, the images

must be reduced so that they fit onto the screen. As such, the combination of Takagi and Lee teaches compressing the plurality of resultant images and then selecting a compressed, resultant image from the plurality of compressed, resultant images for each of the original images.

The combination of Takagi and Lee does not disclose placing each of the selected one of the plurality of compressed, resultant images into a concatenation file; and

creating a look-up table corresponding to the concatenation file by which each of the selected one of the plurality of compressed, resultant images is retrievable from the concatenation file.

In other words, Takagi does not disclose storing the selected compressed resultant images in a file and creating a look-up table used to access the images.

Kutcha discloses a digital camera that stores images in a format that includes both reduced and high resolution versions of an original image. Kutcha teaches creating a compressed, or thumbnail, version of captured images that is stored with the full resolution version of the image, such as shown in figure 2B. The thumbnail image is easily accessed and displayed (column 2, lines 21-32) and offers the advantage of quick review of images captured by or stored in the camera prior to further processing or selection (column 7, lines 34-52). In particular, Kutcha notes that the utilization of thumbnail images is advantageous for simultaneously viewing a plurality of thumbnail images in order to select a corresponding full resolution image for further processing (column 7, lines 47-52).

In addition, Kutcha discloses that when the thumbnail images are stored, they are placed in a

concatenation file, and a directory (i.e. look-up table) by which the thumbnails are retrievable is created and stored in the file as shown in figure 2B.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takagi and Lee by Kutcha to achieve the claimed invention by placing each of the selected compressed, resultant images into a concatenation file and creating a look-up table, as claimed, since the combination of Takagi and Lee teaches displaying a plurality of compressed, resultant (or thumbnail) images and selecting one of the compressed, resultant images, and Kutcha discloses that when thumbnail images are displayed and one is selected, it is advantageous to store not only the full-resolution image corresponding to the selected thumbnail image but also the selected thumbnail image in a concatenation file that includes a look-up table so that images can be easily accessed for review via thumbnail versions of the images (see figure 2B and column 7, lines 47-52).

Regarding claims 2 and 29, Takagi discloses a macro for automating the creating of the plurality of compressed, resultant images (figures 8-10 are macros for setting the parameters for the various resultant images).

Regarding claim 3 and 30, Takagi's discloses using multiple techniques to alter the original image (i.e. changing the exposure, focus, etc.).

Regarding claims 6 and 33, Takagi discloses sharpening the image by changing the focus (figure 9).

Regarding claim 7 and 34, Lee's table comprises file names (81), starting byte information (82), and length of the images (83), as claimed.

Regarding claim 12, Takagi discloses any of the compressed, resultant images may arbitrarily be selected, which includes the smallest one.

Regarding claim 15, Takagi discloses a macro for automating the creating of the plurality of resultant images (figures 8-10 are macros for setting the parameters for the various resultant images).

Regarding claim 16, Takagi's discloses using multiple techniques to alter the original image (i.e. changing the exposure, focus, etc.).

Regarding clam 19, Takagi discloses sharpening the image by changing the focus (figure 9).

Regarding claim 20, Lee's table comprises file names (81), starting byte information (82), and length of the images (83), as claimed.

4. Claims 4, 5, 8, 9, 11, 17, 18, 21, 22, 24, 31, 32, 35, 36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,486,893 by Takagi in view of U.S. Patent 5,635,984 by Lee and U.S. Patent 5,164,831 by Kutcha et al. ("Kutcha"), as applied to claims 1, 13, and 28, and further in view of U.S. Patent 6,148,149 by Kagle.

Regarding claims 4, 5, 31, and 32, Takagi is silent to altering the original image by rotating or flipping.

Kagle discloses a digital camera system that automatically detects the orientation of the camera when a picture is taken, and then adjusts the picture by rotating (flipping) the image by 90 degrees so that a portrait image corresponds to the default orientation of landscape (column 3, lines 30-40). The image is then assigned an indication of its orientation (column 3, lines 56-67).

It would have been obvious to modify Takagi to further alter the original image by rotation and flipping as taught by Kagle since Kagle teaches that a user may desire for captured images to all conform to a default orientation.

Regarding claims 8, 9, 35, and 36, Takeda discloses the table includes information about the images such as size and location in memory, but Takeda does not disclose that the degree to which the images were flipped or rotated is stored in the look-up table.

Kagle discloses a digital camera system that automatically detects the orientation of the camera when a picture is taken, and then adjusts the picture by rotating (flipping) the image by 90 degrees so that a portrait image corresponds to the default orientation of landscape (column 3, lines 30-40). The image is then assigned an indication of its orientation (column 3, lines 56-67).

It would have been obvious to modify Takeda by Kagle to achieve the claimed invention by including the orientation data (i.e. degree of flipping/rotating) in the look-up table as claimed, since Kagle teaches that additional information pertaining to the orientation is stored along with the rotated/flipped images (column 3, lines 61-64), and Takeda discloses placing any additional information pertaining to the stored digital images, such as size and location, in a look-up table as shown in figure 5 to facilitate retrieval.

Regarding claims 11 and 38, Takagi is silent to compressing each of the resultant images. Takeda discloses storing each of the selected resultant images in a compressed format, but is silent to compressing them into GIF files.

Kagle discloses a digital camera that compresses each of the captured imaged into the GIF format (column 3, lines 7-25).

It would have been obvious to compress each of the resultant images into a GIF file, since Takeda teaches storing the resultant images in compressed form (126, figure 2A), and Kagle teaches that the GIF format is a standard compression format used to compress captured digital images.

Regarding claims 17 and 18, Takagi is silent to altering the original image by rotating or flipping.

Kagle discloses a digital camera system that automatically detects the orientation of the camera when a picture is taken, and then adjusts the picture by rotating (flipping) the image by 90 degrees so that a portrait image corresponds to the default orientation of landscape (column 3, lines 30-40). The image is then assigned an indication of its orientation (column 3, lines 56-67).

It would have been obvious to modify Takagi to further alter the original image by rotation and flipping as taught by Kagle since Kagle teaches that a user may desire for captured images to all conform to a default orientation.

Regarding claims 21 and 22, Takeda discloses the table includes information about the images such as size and location in memory, but Takeda does not disclose that the degree to which the images were flipped or rotated is stored in the look-up table.

Kagle discloses a digital camera system that automatically detects the orientation of the camera when a picture is taken, and then adjusts the picture by rotating (flipping) the image by 90 degrees so that a portrait image corresponds to the default orientation of landscape (column 3, lines 30-40). The image is then assigned an indication of its orientation (column 3, lines 56-67).

It would have been obvious to modify Takeda by Kagle to achieve the claimed invention by including the orientation data (i.e. degree of flipping/rotating) in the look-up table as claimed,

since Kagle teaches that additional information pertaining to the orientation is stored along with the rotated/flipped images (column 3, lines 61-64), and Takeda discloses placing any additional information pertaining to the stored digital images, such as size and location, in a look-up table as shown in figure 5 to facilitate retrieval.

Regarding claim 24, Takagi is silent to compressing each of the resultant images. Takeda discloses storing each of the selected resultant images in a compressed format, but is silent to compressing them into GIF files.

Kagle discloses a digital camera that compresses each of the captured imaged into the GIF format (column 3, lines 7-25).

It would have been obvious to compress each of the resultant images into a GIF file, since Takeda teaches storing the resultant images in compressed form (126, figure 2A), and Kagle teaches that the GIF format is a standard compression format used to compress captured digital images.

5. Claims 10, 23, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,486,893 by Takagi in view of U.S. Patent 5,635,984 by Lee and U.S. Patent 5,164,831 by Kutcha et al. ("Kutcha"), as applied to claims 1, 13, and 28, and further in view of U.S. Patent 5,835,627 by Higgins et al. ("Higgins").

Regarding claims 10, 23, and 37, Takagi is silent to adjusting the size of some of the original images prior to creating the resultant images.

Higgins discloses an image processing system. In particular, Higgins discloses that,

conventionally, digital cameras include algorithms that resize captured images and that resizing is typically done before subsequent processing (column 1, lines 55-67).

It would have been obvious to modify Takagi by Higgins to achieve the claimed invention since Higgins teaches that resizing captured images prior to subsequent processing is a conventional capability of digital cameras and allows a user to place an original image in a desired size.

6. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,343,560 by Takeda et al. ("Takeda") in view of U.S. Patent 6,148,149 by Kagle.

Regarding claims 25 and 27, Takeda discloses a hand-held device (figure 1), comprising:

a display (5);

a memory (9-13) having stored therein a concatenation file (figure 4) having data corresponding to a plurality of compressed images each representative of an original image (i.e. each original image is compressed by compression processor 14) and a look-up table (figure 5) having data indicative of a starting byte location of each of the compressed images within the concatenation file ("head address") and data indicative of the length of each of the compressed images within the concatenation file ("size");

a program (e.g. figure 2) cooperable with the look-up table for accessing the data corresponding to each of the plurality of compressed images and for decompressing and using any accessed data to display an image representative of an original image (i.e. the compressed images are decompressed by expansion processor 15 and displayed on display 5).

Takeda does not disclose including data "indicative of whether each of the compressed images was flipped or the degree of rotation as compared to its corresponding original image..." and the image is flipped or rotated "so that the orientation of the displayed image corresponds to the orientation of its corresponding original image."

Kagle teaches capturing an image at some orientation. During capture, the camera senses the orientation of the camera and records data indicating the orientation with the image after it is compressed using a standard such as JPEG or GIF. Then, prior to displaying the image, the image is rotated or flipped so that it corresponds to the original orientation of the captured image. For example, a portrait image taken of a person is stored in the default landscape orientation. Then, when the picture is to be viewed, the image is rotated or flipped so that it corresponds to the original portrait orientation rather than the default landscape orientation. This feature "eliminates the need to preview and rotate pictures" (column 2, lines 1-11) and would have been an obvious modification.

It would have been obvious to modify Takeda by Kagle to further rotate or flip the displayed image, as claimed, and as taught by Kagle since Kagle teaches that flipping or rotating an image upon display into the image's original orientation eliminates the need for a user to preview and rotate the images manually.

(10) Response to Arguments

I. Detailed Explanation of the Rejection of Claim 1:

The combination of Takagi, Lee, and Kuchta constitutes the current rejection of claim 1.

A. Explanation of Takagi: Referring to figure 5, Takagi utilizes an image sensor 1 (figure 2) to initially capture an image of a scene in step 101 (see column 5, lines 16-17). The image consists of 540,000 pixels – i.e. 900x600 pixels (see column 3, lines 63-66).

Next, the original image is altered in a plurality of different ways to generate a plurality of resultant images based an "ordinary calculation" (step 101), a "calculation relevant to exposure" (step 104), a "calculation relevant to focus" (step 105), and a "calculation relevant to composition" (step 106). Essentially, these resultant images correspond to different ways of changing the appearance of the captured image.

Then, the plurality of resultant images are displayed (107), and the user selects a desired image from among the displayed images (108).

Thus, Takagi captures an original image and then predicts what the image will look like when different parameters such as the exposure and focus are adjusted. The user selects a desired appearance of the image corresponding to desired photography parameters.

Prior to displaying the plurality of resultant images, Takagi necessarily stores the image signals (see column 11, lines 16-18 and column 12, lines 43-44). Figure 15 shows Takagi's method of displaying the resultant images to a user on the camera's "electronic view finder." Eight resultant images are simultaneously presented to the user so that the user can make a selection while viewing all of the images.

It should be noted that Takagi creates a plurality of resultant images for "each of a plurality of original images" – in other words, for each preview image captured by the camera, a plurality of resultant images are displayed so that the user can make a selection of the one desired resultant image. The user can take as many preview images as desired, and from each of those preview images, a plurality of resultant images are generated.

Therefore, Takagi is considered to disclose: *a method for storing a plurality of images, comprising*:

creating for each of a plurality of original images a plurality of resultant images by altering the content of each of the plurality of original images a corresponding plurality of different ways; *and*

selecting from the plurality of resultant images created from each of the plurality of original images one resultant image.

Takagi does not expressly disclose compressing the plurality of resultant images, as claimed. Also, Since Takagi's system is directed to storing ultimately captured images on film rather than digitally in some sort of file format, Takagi does not disclose placing each of the (compressed) resultant images into a concatenation file and creating a look-up table for retrieving them from the file, as claimed.

B. Explanation of Takagi + Lee: Lee is another disclosure pertaining to an electronic camera. Like Takagi, Lee's system involves displaying a multitude of images on a display, such as shown in figure 11. In particular, Lee teaches that when a plurality of images are to be

displayed on a display screen, the images must be compressed so that all of the images can fit on the screen at the same time (see column 4, lines 22-28).

This teaching is directly applicable to Takagi's disclosure. As mentioned above, Takagi's figure 15 shows eight images being displayed on the viewfinder of a camera. The originally captured image in figure 5 of Takagi is 540,000 pixels in size, and since Takagi does not teach adjusting the size of that image, each of the eight resultant images are presumably the same size.

Thus, Takagi's display step (107) involves displaying eight images of 540,000 pixels (approx. 4 million) onto the viewfinder of a camera. Logic holds that, prior to display, each of the eight images needs to be compressed (i.e. reduced) so that they all fit on the screen.

Takagi does not expressly state that the resultant images need to be compressed prior to displaying them, however, compression of the images is so easily inferred as to be substantially inherent in Takagi's disclosure.

Nevertheless, Lee was relied upon for the express teaching that when one wishes to display multiple images on a screen simultaneously, it is necessary to compress the images so that they fit on the screen. Such a teaching would have motivated a skilled artisan to compress the resultant images prior to their simultaneous display.

Thus, the combination of Takagi and Lee discloses *a method for compressing and storing a plurality of images, comprising*:

creating for each of a plurality of original images a plurality of resultant images by altering the content of each of the plurality of original images a corresponding plurality of different ways;

compressing each of the plurality of resultant images; and

selecting from the plurality of compressed, resultant images created from each of the plurality of original images one compressed, resultant image.

Lee appears to disclose storing images digitally but does not expressly disclose placing compressed resultant images into a concatenation file and creating a look-up table for retrieving the images from the file, as claimed.

C. Explanation of Takagi + Lee + Kuchta: Kuchta is yet another disclosure pertaining to an electronic camera. The main concept of Kuchta's disclosure is providing a method and system for storing multi-format images in an electronic camera. In particular, Kuchta teaches a system for storing images in both a full- and reduced-resolution format.

Kuchta identifies a problem in the prior art encountered when "previewing" images, such as done by Takagi and Lee. Kuchta teaches that it is often desirable to preview a camera image on a display prior to deciding what to do with the image. However, a problem arises in that the display process is usually very slow. A typical image on the order of 1 million pixels is stored in a compressed format. Thus, in order to display the image, it must be first decompressed. Such a decompression operation can take a long time and interfere with the review process. See column 1, lines 14-48.

To overcome this problem, Kuchta devised a multi-resolution image format utilized for storing images. In particular, the format is composed of a full resolution version of an image along with a reduced resolution version of the image. See column 2, lines 21-48.

The advantage of utilizing Kuchta's image format is that a user can quickly access and display the smaller version, or "thumbnail" version, of an image for examination. The thumbnail version is only a fraction of the size of the larger full-resolution version and can therefore be displayed in a fraction of the time that it takes the larger image to display. See column 7, lines 34-47.

Kuchta also notes that the thumbnail version is advantageously utilized for displaying a plurality of images in a "mosaic" on a screen (Cf. figure 15 of Takagi and figure 11 of Lee) so that a user can select a "desired" full resolution version for further processing, printing, or the like. See column 7, lines 47-52.

The thumbnail and full-resolution images corresponding to a particular image are stored together in a concatenation file, such as shown in figure 2B. Also shown in figure 2B is a file directory, which is essentially a look-up that is used for keeping track of which images are in the file and their relative locations in memory, thereby allowing easy access to the images.

Kutcha's multi-format method is essentially an improved method of storing Tagaki's compressed, resultant images, which are to be displayed as thumbnails. By storing Takagi's compressed, resultant images according to Kutcha's method, the reduced-size preview images can be quickly displayed since decompressing the full-resolution version of the image is not required.

Based on these teachings by Kuchta, a skilled artisan would have been motivated to modify the combination of Takagi and Lee to achieve the claimed invention by "placing each of the selected one of the plurality of compressed, resultant images into a concatenation file," as

claimed, as well as "creating a look-up table (e.g. a directory) corresponding to the concatenation file" for retrieving the images from the file, as claimed.

Since the compressed, resultant images that are displayed as a group per Takagi's teachings (i.e. figure 15) are already stored in memory prior to display, the combination of Takagi, Lee, and Kuchta teaches that all of the "selected" images have already been "placed" into a concatenation file (i.e. stored) at the time of selecting. Therefore, the combination is considered to teach "placing each of the selected one of the plurality of compressed, resultant images into a concatenation file."

The claim does not preclude other images from being "placed" in the concatenation file (such as unselected compressed, resultant images and uncompressed resultant images) – it merely requires that at least the selected images be placed in the file. So the teachings of the proposed combination, whereby all of the compressed and uncompressed, resultant images are placed in the file, is considered to cover the limitation of "placing each of the selected images" in the file.

II. Response to Appellant's arguments pertaining to the application of Lee for claims 1-24 and 28-39 (pp. 8-10 of the Brief):

Appellant asserts that the combination of Takagi and Lee is improper because Lee teaches compressing images for display purposes, whereas the present invention discloses compressing images for the purposes of storage and is not concerned with displaying anything. Appellant's basic argument is that the application of Lee does not "address the problem

confronted by the claimed invention of how to increase the number of images storable in a memory device" (p. 8 of the Brief).

This argument is only true insofar as Lee does not address the problem confronted by the *disclosed* invention. The claims make no mention of "increasing the number of images storable in a memory device." The claims do not specify that e.g. "the resultant image with the smallest compressed file size for each original image is selected," as disclosed in the Specification in paragraph [0014]. Rather, the claims merely call for "selecting" a compressed, resultant image from a plurality of compressed, resultant images and provide no conditions or limitations regarding how the selection is made.

Takagi teaches displaying images on an electronic view finder so that a user can make a "selection" of one image while viewing all of the images at the same time. As mentioned above, Takagi does not provide any information or teachings as to how the images are modified so that they can be displayed simultaneously.

Lee, whose disclosure is in the same field of endeavor as Takagi, addresses such a problem where multiple images are to be displayed simultaneously. Lee teaches that full-scale images conventionally require reduction (compression) in order to view numerous images on the same screen and at the same time. This teaching is directly relevant to Tagaki's unstated problem of how to display multiple images at the same time, and therefore, utilizing Lee to modify Takagi in the manner proposed should be considered proper.

III. Response to Appellant's arguments pertaining to the application of Kuchta for claims 1-24 and 28-39 (pp. 10-11 of the Brief):

Appellant presents the basic argument that Kuchta "is clearly not concerned with the objective of increasing the number of images storable on a memory device" (p. 10 of Brief). Such an argument is correct because Kuchta is primarily concerned with the ease of access of images at different resolutions rather than attempting to increase the number of storable images on a memory device.

However, as explained above for the combination of Takagi and Lee, the claims do not require nor do they contain limitations for "increasing the number of images storable in a memory device." The claims are written in more generic terms of simply "compressing," "selecting," and "placing," and there is no nexus between these three actions and the concept of "increasing the number of storable images in a memory device."

Notwithstanding the fact that Kuchta may not address the problems of the disclosed invention, Kuchta's teachings pertaining to an improved method of storing images in a camera are highly pertinent to Takagi and Lee's camera systems. The obviousness of combining Kuchta with Takagi and Lee is based on Kuchta's teachings as they relate to the deficiencies of Takagi and Lee, not how they [Kuchta's teachings] relate to the problems tackled by the disclosed invention.

Furthermore, the proposed combination involving Kuchta would not "impermissibly change the principle of operation of at least Lee," as asserted by the Appellant (p. 11 of Brief). Lee is only relied upon for the teaching of compressing a multitude of large images so that they can be displayed together on a screen. Kuchta teaches the desirability and method of storing images in a compressed/uncompressed format for ease of access to multiple versions of the same image. By Kuchta's teachings, images to be previewed can be accessed and displayed quickly

since no resolution-conversion operations are necessary. Such a method of storing images would have been an improvement over Takagi's method, since Takagi's resultant images to be displayed in a thumbnail format such as in figure 15 would not have to be reduced prior to display when they are stored according to Kuchta's method.

IV. Response to Appellant's arguments pertaining to the application of Kagle for claims 25 and 27 (pp. 15-17 of the Brief):

Claims 25 and 27 specify that a look-up table stores "data indicative of the degree to which each of the compressed images was rotated/flipped as compared to its corresponding original image and the program is adapted to rotate/flip the displayed images so that the orientation of the displayed image corresponds to the orientation of its corresponding original image."

Takeda was considered to be silent as to this limitation, and Kagle was relied upon as curing this deficiency in Takeda. Appellant characterizes the operation of Kagle as follows: "when a picture is taken ... the original picture image is stored in the camera as taken along with the degree of rotation of the camera to thereby allow the original picture image to be rotated to correct for camera rotation when the picture is viewed" (p. 16 of Brief).

This characterization is substantially correct and corresponds to Kagle's operation described in figure 5 and column 3, lines 30-67:

An image is captured in either a landscape (▭) orientation or a portrait (▯) orientation based on the manner in which the camera was held by the photographer. The image, whether captured as ▭ or ▯, is stored in a "default orientation," such as ▭ . When the

image is captured, an "orientation sensor" determines the orientation of the camera. Then, a flag is embedded with the stored image to indicate whether the image was originally captured in a ▭ or ▯ orientation.

In other words, since every image is stored in the ▭ orientation, the camera will not know the *actual* orientation of a given image unless such a flag is provided. When the image is to be displayed, the flag indicates whether the captured image orientation and the stored image orientation match. If they do match, then the image does not need to be rotated prior to display. If they do not match, then the image must be rotated so that it can be displayed as originally captured.

Thus, the flags embedded with each image "indicate the degree to which each image was rotated (when stored) as compared to its corresponding original image (as captured)." Then, when an image is to be displayed, the flag is utilized "to rotate the displayed image (if necessary) so that the orientation of the displayed image corresponds to the orientation of its corresponding original image."

Appellant also argues that Kagle teaches that the stored camera orientation data "is to be used by a device external to the camera" (p. 17 of Brief), implying that the combination of Takeda and Kagle is improper because Kagle's display is not included in the same apparatus as the camera and is therefore external to the camera. However, Takeda discloses the image display as included in the overall image processing apparatus (figure 1 of Takeda).

Furthermore, the "hand-held device" preamble has been given no patentable weight because it does not "breathe life" into the claims, nor does it provide any definite structural limitations by which one skilled in the art would be apprised of the metes and bounds thereof.

Even if such a preamble were given patentable weight, embodying Takeda's system into a smaller, portable device would have been a judicially-recognized obvious modification in the absence of unobvious results. See In re Lindberg, 194 F.2d 732, 735, 93 USPQ 23, 26 (CCPA 1952) and In re Rose, 220 F.2d 459, 463, 105 USPQ 237, 240 (CCPA 1955). See also MPEP § 2144.04.

V. Response to Appellant's arguments pertaining to the application of Kagle for claims 4, 5, 8, 9, 17, 18, 21, 22, 31, 32, 35, and 36 (pp. 12-14 of the Brief):

Appellant argues that Kagle does not "disclose, teach, or suggest the desirability of rotating or flipping an already stored image, i.e., the original image, and then compressing the rotated or flipped image to thereby increase the number of images storable in a memory device" (p. 13 of Brief).

Claims 4, 5, 17, 18, 31, and 32 merely call for the original image to be altered by "rotating" or "flipping." There is no mention of rotating or flipping an "already stored image." Rather, an "original image" is rotated/flipped regardless of whether it has "already been stored."

Therefore, the discussion of claims 25 and 27 is also applicable to claims 4, 5, 17, 18, 31, and 32. As explained above, an image originally captured in a portrait orientation by the camera is rotated (or angularly "flipped") for storage in the default landscape orientation. Upon display, the image is again rotated/flipped so that it can be viewed in the orientation corresponding to the originally captured image (i.e. portrait).

In essence, Kagle teaches that altering an original image by rotating or flipping is a conventional way of altering the content of an originally captured image for the purposes of

uniform storage – i.e. all of the original images are stored in a landscape orientation regardless of their actual orientation. Kagle embeds a flag with each image so that, upon display, each image may be re-rotated, if necessary, so that they can be viewed at the proper orientation.

Appellant also asserts that the Advisory action dated August 29, 2005, stated that the Examiner "believes that Applicant's described 'purposeful' rotation/flipping process distinguishes from Kagle ..." (p. 12 of Brief). However, the Advisory Action makes it clear that, while the Appellant's *disclosed* method of "purposeful" rotation may distinguish from Kagle's methods, Appellant has not presented claims that substantially differentiate form the applied prior art for the reasons given. A more particularized construction of the claims involving the "rotating" and "flipping" may distinguish from the prior art, but not as currently written.

Claims 8, 9, 21, 22, 35, and 36 specify that the look-up table comprises "data indicative to the degree to which each of the ... resultant images was rotated as compared to its corresponding original image." This limitation is substantially the same as that in claims 25 and 27, which specify that a look-up table stores "data indicative of the degree to which each of the compressed images was rotated as compared to its corresponding original image and the program is adapted to rotate the displayed images so that the orientation of the displayed image corresponds to the orientation of its corresponding original image."

Therefore, the remarks above for claims 25 and 27 regarding Kagle are considered to be directly applicable for claims 8, 9, 21, 22, 35, and 36.

VI. Response to Appellant's arguments pertaining to the application of Higgins for claims 10, 23, and 37 (pp. 14-15 of the Brief):

Appellant argues that the combination involving Higgins is improper essentially because Higgins does not resize images for the same purpose as the present invention. Examiner contends that Higgins need not resize images for the same purpose as the present invention in order to render the claims an obvious variant in view of Higgins and the other cited prior art. The only consideration is what those skilled in the art would have known or would have been motivated to do at the time of the invention.

Here, Higgins discloses, "A System and Method for Automatically Optimizing image Quality and Processing Time," and teaches that, *inter alia*,

> Several currently available digital cameras allow images to be stored at various resolutions. Additionally, digital image resizing algorithms are well known; and could be used to change the resolution of a previously acquired image before subsequent processing. (column 1, lines 55-67).

Based on such a teaching, one skilled in the art would have been motivated to "adjust the size of at least some of the original images prior to the step of creating the plurality of resultant images." The present invention's reasons for resizing are immaterial to the questions of patentability and obviousness since the claims call for nominally "adjusting the size" of the images, and nothing more.

VII. Conclusion

While the combinations of the prior art presented in the Final Rejection may not fully teach or enable the *disclosed* invention, the Examiner believes that such combinations are

sufficient to render the *claimed* invention obvious. The cited prior art may not specifically pertain to Appellant's stated problem of compressing images for storage, but the claims are written in such generic terms that can be considered obvious variants of camera picture-previewing systems that compress images for display and allow a user to select from among displayed images, as discussed herein. This is not to say that the present invention, when more particularly claimed, would not be unobvious over the cited prior. However, the claims in their present state should be considered obvious variants of the prior art for the reasons presented herein.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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